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MILITARY OPERATIONS ON URBANIZED TERRAIN (MOUT)

Student Handout

On the night of 30 January 1968, a force of over 84,000 North Vietnamese Army Regulars and Viet Cong simultaneously moved into five major cities and thirty six provincial capitals in South Vietnam. They took advantage of the relaxed allied defenses during the Vietnamese New Year (Tet) to cover their movement. This highly coordinated operation became known as the Tet Offensive. In a key part of this operation, the NVA moved over ten battalions into Hue, the imperial capital of South Vietnam, gaining control literally overnight. In Hue, they established a series of strongpoint defensive positions, each several blocks apart and mutually supporting. A typical strongpoint consisted of a three story building, surrounded by a courtyard and stonewall; snipers were positioned in upper stories, automatic weapons in the lower floors; and spider holes surrounded the courtyard. In response, two battalions of Marines were tasked to attack the NVA and secure the southern portion of the city. A third battalion of Marines then conducted a passage of lines to recapture the imperial palace and northern portion of the city. After a month of bloody fighting, Hue City was finally declared secure and the battle was over.

1. INTRODUCTION

a. Urban warfare is as old as warfare itself. The capture of urban terrain has long been a military imperative, primarily due to the role cities and towns have played as centers of government, industry, transportation, and culture. From our first expeditionary landing at New Providence in the Bahamas, through the streets of Mexico City, and in Haitian towns and villages during Lewis B. "Chesty" Puller's day, Marines have continually played a pivotal role in battles for urban areas. Hue City, described above, is just one of the recent epic fights involving Marines in urban warfare. Marine combat experiences in urban environments during the last forty years include:

Seoul and Inchon	*- 1950*	*Grenada*	*- 1983*
Beirut	*- 1958,1982-1984*	*Panama City*	*- 1989*
Dominican Republic	*- 1965*	*Kuwait City*	*- 1991*
Hue	*- 1968*	*Mogadishu*	*- 1993-1994*
Phnom Penh and Saigon	*- 1975*	*Haiti*	*- 1994*

b. Several factors necessitate Marine preparedness to fight in a future urban environment.

(1) Urbanization is rapidly increasing throughout the world. Half the population of developed countries lives in urban areas. In Europe, for example, excluding the former Soviet Republics, there are 375 cities with a population in excess of 100,000.

(2) Demographic studies reveal that two thirds of the world's population have been living within 500 kilometers of the sea since the mid-1980's.

(3) Current predictions are that 85 percent of the world's population will reside in urbanized areas by the year 2025. As the world's urbanization increases the military significance of cities will likely increase proportionally.

(4) Marines, as the principal power projection element of naval expeditionary forces, practice the concept of *operational maneuver from the sea (OMFTS)* and must be capable of capitalizing on seaward approaches to the urban areas near littoral regions. Numerous times in recent history, Marines have been the immediate force of choice to evacuate U.S. citizens from urban areas, and/or to secure a port or airfield to facilitate the introduction of follow-on forces.

(5) Implications for the future are clear, urbanization and the population of littoral regions will continue to increase. Marines will find themselves deployed to these areas and will be faced with conducting a wide range of operations within the urban setting. The concept of the "three-block war" means that Marines must be prepared to operate in an environment ranging from humanitarian assistance to mid or high intensity conflict at the same time and most likely within the same operational area.

2. **PURPOSE**. MOUT is defined as all military actions that are planned and conducted on terrain where man-made construction affects the tactical options available to the commander. It requires a thorough knowledge of unique terrain characteristics, detailed planning down to the smallest unit level, and sound leadership at all levels.

3. **CATEGORIES OF BUILT-UP AREAS**. Built-up areas are classified as:

a. Villages (population of 3,000 or less)

b. Strip areas (urban areas built along roads connecting towns or cities)

c. Towns or small cities (population up to 100,000 and not part of a major urban complex)

d. Large cities with associated urban sprawl (population in the millions, covering hundreds of square kilometers)

In general, villages and strip areas are commonly defended or attacked by companies and battalions. Towns and small cities involve operations with units ranging from entire battalions to divisions. Large cities and major urban complexes might require an entire Marine Expeditionary Force.

4. **MILITARY ASPECTS OF URBANIZED TERRAIN**. When conducting the estimate of the situation, the platoon commander analyzes the urban terrain in detail using OCOKA-W as a guide. Due to the uniqueness of the MOUT environment, special consideration should be given to the study of terrain, in particular observation and fields of fire, obstacles and key terrain. The terms *urbanized terrain, built-up area* and *urban environment* are synonymous.

a. **Observation and fields of fire**. Observation and fields of fire are usually restricted to the lanes established by streets and alleys. Observation is further restricted by the smoke, dust and debris created by intense fighting. Due to limited visibility, fighting is often at close range and the outcome largely depends on the initiative and aggressiveness of small unit leaders. Engagements historically occur at ranges less than 50 meters. Fields of fire may or may not be restricted based on the type and height of building construction. Because of these restrictions, increased importance is placed on seizing or securing the taller buildings and structures for use as observation posts. Rubble and debris created by the destruction of buildings can severely obscure observation and, in some cases, restrict existing fields of fire. Defenders may consider deliberately rubbling, or partially destroying buildings to improve observation and fields of fire. Attackers should employ smoke and/or suppress likely enemy OPs to facilitate movement. Rubble also reduces mobility and increases the vulnerability of tanks, armored personnel carriers and other vehicles to ambushes by dismounted forces.

b. **Cover and concealment**. Built-up areas can provide excellent cover and concealment for both the attacker and defender. However, the defender has an important advantage in that the attacker must eventually expose himself in order to move through the built-up area. The defender increases his advantage by preparing defensive positions in solidly constructed buildings offering good fields of fire. The defender may also rubble or partially rubble buildings likely to be used by the enemy for cover and concealment and place obstacles to deny the enemy access to cover. The effectiveness of cover depends both upon the **density of the buildings** (i.e., a city block versus a housing suburb) and the **nature of their construction** (wood, cinder block, reinforced concrete). Buildings constructed of flammable materials can prove to be death traps for those using them. Stone and masonry buildings with thick walls offer excellent cover even when bombardment has reduced them to rubble. Buildings with basements or cellars and those with two or more stories offer increased overhead cover. Attackers can better capitalize on cover and concealment by conducting good reconnaissance and using city maps or building blueprints if available.

c. **Obstacles**. Existing obstacles are abundant in MOUT, and they can easily be strengthened with reinforcing obstacles to enhance counter-mobility. Buildings set close together in geometric patterns present obstacles to both troops and vehicles. This is particularly true in areas of block-type construction, such as that found in a downtown area of a city. Streets are relatively easy to barricade and cover with fire, thereby adding effectiveness to the obstacles. Rubble caused by artillery, air, direct fire weapons and explosives create further obstacles which disrupt, fix or block movement. Obstacles are also extremely effective inside buildings. Stairwells, hallways, doors and windows can all be easily barricaded and/or booby-trapped to kill, delay or harass an attacking force. Both attackers and defenders alike will depend on extensive engineer support to fight in the urban environment. Increased amounts of obstacle building, breaching equipment, and material will be needed in the built-up area.

d. **Key terrain**. Key terrain are the key structures and critical public areas that dominate an urban area and may have strategic, operational, or tactical value. Key terrain in a built-up area includes such things as: heavily constructed or fortified buildings covering large or important avenues of approach, major intersections, electric power plants, water supply/purification plants, transportation centers, communication centers, buildings with historical or religious significance, government buildings and bridges. Terrain surrounding the urban area that facilitates entry or denies escape could also be key terrain.

(1) Decisive terrain consists of a critical public area or key structure, the control of which provides a decisive advantage to the attacker or defender. In Mogadishu, Somalia, for example, the "21 October Road," which runs the length of the city, and is the major thoroughfare, was considered by some to be *decisive*. Failure to control this road by Marines meant that the warlords controlled the major transportation route and line of communication in Mogadishu.

(2) Critical public areas. Critical public areas should also be identified in the planning process. They are locations within a built-up area that may require special coordination to seize, defend or avoid damage to. Hospitals, for example, may be critical areas because the laws of war prevent their attack when not used for military purposes other than care for the wounded. Civil defense facilities, air raid shelters, and food supply locations may be critical in dealing with civilian populations.

e. **Avenues of approach**. The most obvious avenues of approach within the built-up area are the streets, alleys and other open areas predominant in urban terrain. However, the defender will have many of these avenues barricaded and covered by fire. Often the best avenue of approach is through existing buildings, across roofs, or in subterranean tunnels, sewers, and drainage systems. Avenues of approach are considered in terms of their suitability for both day and night operations. Both attackers and defenders may need to consider avenues of approach to the urban area, as well as within built-up area.

f. **Weather**. Considerations for weather in an urban environment are generally the same as for those in any other environment. Extreme temperatures, both hot and cold, may convince units to occupy the interior of structures as opposed to securing both the interior *and* exterior. Precipitation (heavy rain, snow, sleet or ice) may preclude mechanized/motorized use of certain avenues of approach. Likewise, sewer and tunnel systems that offer dismounted avenues of approach into the urban area may be impassable. In large cities with block type construction, wind direction and speed may be altered and affect the employment of smoke, CS and white phosphorous. Air inversion layers over cities may cause smoke and dust to linger longer than normal and reduce visibility. If electric power remains, building and street lights will increase visibility at night, but may reduce the effectiveness of NVGs. If no electricity remains, NVG performance in and around buildings may be reduced due to the lack of ambient light.

5. **OFFENSIVE OPERATIONS**. Offensive operations within the built-up area are planned and implemented based on a detailed METT-T, current doctrine, techniques, and procedures acquired during training. Offensive operations in the urban environment are characterized by the following:

- as much planning, reconnaissance, coordination, and rehearsals as time allows.
- task organization of forces for combat.
- centralized planning, decentralized execution.
- necessity of solid individual and small unit training and skills.
- increased consumption of supplies (ammunition, engineer, medical, personnel, etc.).
- longer time required to accomplish the mission.

a. **Deliberate attacks**

(1) A deliberate attack is a fully coordinated operation that employs the MAGTF's combined arms team against the enemy's defense. It is necessary when enemy positions are well prepared, when the built-up area is large, or the element of surprise has been lost. A deliberate attack uses precise planning and thorough reconnaissance, preparation, and rehearsals.

(2) Phases of the attack. As a basic fundamental of combat in built-up areas, the attack will follow four distinct phases. Like the attack of a strongpoint, these phases provide a systematic approach to reducing a prepared defense and focuses strength at an enemy weakness. These four phases are considered and drive the planning process. During execution, however, the phases will likely overlap.

PHASE I: Reconnoiter the objective. Intelligence gathering and reconnaissance/surveillance are critical to the planning process and success of the mission. Information concerning the enemy, building composition and type, subterranean features, obstacles, maps or sketches of the town or specific buildings, and blueprints of specific buildings are all examples of information that may be useful for attacking in the built-up area. Extensive leader's reconnaissance may not always be possible. In this case, small unit leaders may only be able to conduct a vantage point recon to determine the building's location, layout, and enemy disposition.

PHASE II: Isolate the objective. This phase may include isolation of an entire urban area or a designated portion of a larger urban area. At the platoon level, it normally involves isolation of an individual building or a small group of buildings within a platoon zone of action as designated by the company commander. At the squad level, it will entail isolating likely enemy positions around the point of entry of the objective. This phase is often times conducted simultaneously with Phase III (securing a foothold). Units isolate the urban objective in order to prevent the enemy from reinforcing the objective area, to cut off the enemy's lines of communications and routes of withdrawal, and to **suppress enemy positions that may oppose the assault**.

PHASE III: Secure a foothold. During this phase, a foothold is established within each assigned zone of action. This should be done as soon as possible to maintain tempo. A battalion may secure a block of buildings on the edge of a larger urban area to gain a foothold. A platoon may secure the first room of a large building to gain their foothold. The foothold provides the attacking force with a position from which they can continue the assault and must be capable of allowing the rapid build up of combat power through that point. The attacking force may designate intermediate objectives in order to support seizure of the foothold. The routes to the foothold/point of entry should provide concealment from enemy observation and cover from enemy direct fire weapons.

PHASE IV: Seizing the objective. Once a foothold has been seized and consolidated, supporting forces move to the built-up area to support the seizing/clearing of the objective area. In order to maintain tempo, the transition between this phase and Phase III should be seamless. The unit may choose **systematic clearance** from room to room, building to

building, within its zone. Systematic clearance may be the method to use if no critical objectives are identified, the area is densely built-up, or if the enemy positions are strong. If a critical objective is identified, time is critical, or if the area is spread out and/or lightly defended, the unit may choose to conduct a **rapid advance** on route to a critical objective. Using this tactic, buildings and other likely enemy positions along the route of advance are bypassed and/or suppressed, allowing the assaulting force to quickly move to the objective. Command and control, adjacent unit coordination, security placed in cleared buildings, and use of the reserve are all planning considerations for clearing no matter which tactic is used.

b. **Hasty attack.** Forces conduct hasty attacks as a result of unexpected contact during movement through the built-up area or in a situation where the force has a fleeting opportunity to attack vulnerable enemy forces. When contact is received from an enemy position the commander immediately deploys (seeks cover and positions of advantage), returns fire to fix the enemy and gain fire superiority with all means available, reports situation to higher, develops the situation to determine enemy disposition, and chooses a course of action. **It is important to note that the hasty attack follows the same four phases as the deliberate attack.** Obviously, planning, preparation, and implementation of the four phases for a hasty attack may have to be immediate or delayed until additional fire support can be brought to bear.

6. **RIFLE PLATOON IN THE ATTACK**. As with all operations, the rifle platoon commander begins planning for offensive operations in a built-up area with a detailed METT-T. The platoon commander's planning is **centralized** to ensure thorough understanding and coordination among the squads and adjacent units. The execution, however, is normally **decentralized** and depends heavily on the training, initiative, improvisation, and leadership of the squad and fire team leaders. Unit SOPs and individual skills are also vitally important to decentralized execution. As part of a company attack, the rifle platoon may be assigned the mission as the ***assault, support or security force***. As the assault force, rifle platoons are normally required to attack within an assigned zone of action. The platoon takes maximum advantage of cover and concealment within their zone to maneuver the assaulting squad/s into positions that allow entry into the flank of the objective building, if possible. This maneuver will be covered by security and support forces. Frontages assigned to assaulting rifle platoons may vary, depending primarily on the type of built-up area and the distance between structures.

a. **Planning considerations**. In general, the platoon commander must devise a plan that achieves a combined arms effect, capitalizes on speed and violence of action, provides security, and achieves surprise. By isolating the objective and/or entry point and suppressing the enemy in the objective building or in adjacent buildings that may affect the assault, a combined arms effect may be achieved if done in conjunction with maneuver. Speed is used to close with the objective and to take advantage of suppressive fires. Violence of action concerns an overwhelming amount of suppressive fire and actions taken to gain a foothold and subsequent clearing operations. Whenever possible, Marines enter through the least defended point or create a breach hole; that is, to make a hole where one did not exist and then exploit it rapidly. Both speed and violence of action may help achieve surprise, but in MOUT tactical surprise may not always be possible. To offset the lack of tactical surprise, one should seek to achieve technical surprise. An example of this might be using a SMAW to create a breach into a building vice using an existing doorway. As with all operations, security is always of utmost concern. At the platoon level "security" may be provided by higher headquarters, but down to the fire team level security must be a concern at all times. Because of the three dimensional characteristics of the built-up area, security must be maintained above and below, 360 degrees, of the individual or small unit to address immediate threats from the local surroundings (i.e., windows, doors, alleys, etc.).

(1) Platoon task organization. When attacking a building, or group of buildings, the rifle platoon should task organize itself into an ***assault, support, and security force***. This task organization is dependent on METT-T, but generally one rifle squad performs the duties of the assault, another support, and the third is the security force. If security is provided by higher, then two squads can serve as either assault or support. Squad integrity should be maintained. Attachments can augment these forces. For example, an engineer or 0351 team could augment the assault force to provide breaching capabilities. A machine-gun team or tank platoon could augment the support force. Assault and support forces may rotate as the attack proceeds or if the initial assault force begins to take casualties. (See Figure 1.)

Figure 1

(a) Assault Force. This force will conduct a preponderance of the "seizing" actions. At the platoon level, an assault force may consist of one or more squads and may be tasked with seizing a building, a part of a large building, or a group of small dwellings. The assault force normally will be organized to maintain a light combat load, as it will rely heavily on its speed of movement to accomplish its mission.

(b) Support Force. This force provides direct and indirect fires to assist the assault force's ability to approach and seize the objective area. Many times, attachments such as machine-gun teams, TOWs, SMAW teams, tanks, and mortars are attached to the support force. They assist in isolating buildings/points of entry (machine guns, mortars) and creating breaches (SMAWs, TOWs, tanks).

(c) Security Force. This force will provide external security for the objective area. On a large scale, this might mean providing security (isolate) for a village or a city block. On a smaller scale, it might be for one building or the hallway of one floor within a building.

(2) Command and Control. As stated before, offensive operations in a built-up area are centrally planned, but decentralized during the execution. This decentralized execution, the close quarters nature of the battle, and the

compartmentalized nature of the built-up area make command and control difficult. Once the battle begins, the attack on urban terrain is largely a fire team and squad leader's fight. Leaders can improve their command, control, and overall situational awareness by addressing the following in their planning process.

(a) Commander's location. Commanders locate themselves forward where they can best observe, control, and influence the fight. This is relative to the level of command. Squad leaders, for example, need to be located where they can influence the fire teams as they gain a foothold and begin clearing. Platoon commanders need to be where they can control their squads, maintain situational awareness, and bring supporting arms to bear if needed.

(b) Communication challenges. At the small unit level, communication capabilities can be severely hindered by the built-up area. Buildings and building materials tend to break up, absorb, or reflect radio signals. Problems may be encountered with all radio assets normally found at the small unit level. Planning must address this and overcome it by using taller buildings, field expedient antennas, wire communications, line of sight/hand and arm signals, messengers, and control measures.

(c) Tactical control measures. To help control his unit, ensure unity of effort, and prevent friendly fire, the unit commander plans for and implements tactical control measures. Tactical control measures normally used in the attack are used in the built-up area as well and should be coordinated at all levels. Phase lines are placed along identifiable terrain features (streets, alleys) to control the rate of advance of assaulting units. Boundaries prevent units from straying into another unit's fire. Checkpoints placed at prominent intersections can be used to report position and to mark progress. Streets can be renamed for security reasons or if maps are not available. Buildings can be numbered or lettered to facilitate identification, control fires, and simplify reporting procedures. Levels of individual buildings and its windows and doors can be lettered and numbered to facilitate easy fire direction and to ensure all sectors are covered. No Fire Areas(NFA) or Restricted Fire Areas(RFA) may be placed around friendly positions or areas of political, historical, or religious significance. Units should establish clearly recognizable and understandable signals for marking cleared rooms and buildings to prevent redundant clearing, friendly fire, to inform higher and adjacent units of the unit's progress, and to facilitate supporting fires. Figures 2 and 3 graphically portray some examples of control measures used in an urban area.

Figure 2 Figure 3

(3) Intelligence. Intelligence is imperative to successful offensive operations in an urban environment. Intelligence gathering will be more difficult because of the natural overhead cover and concealment afforded the defender. Additionally, detailed information required at the small unit level (i.e., number of enemy within a building or the interior layout of a building) may not be available.

(a) Information requirements. In addition to information normally required for all operations concerning enemy location, disposition, and strength, friendly situation, general nature of the terrain, etc., urban warfare will require information specifically related to the small unit in the offense. The following are some examples:

- type and construction of buildings to be attacked
- building layout if known (general or detailed)
- location and type of obstacles leading to and within objective buildings
- location and layout of underground structures near the small unit's objective such as subways or sewers
- location of any civilians in the objective area

(b) Reconnaissance. Reconnaissance at the small unit level may consist of very detailed information provided by higher friendly units or outside agencies. Information may be gathered by the small unit itself if operating in an urban area for a period of time. Reconnaissance at the small unit level, however, may be nothing more than a vantage point or map recon done immediately prior to the hasty attack.

(c) Maps. Maps of the urban area may or may not be available at the small unit level. Furthermore, because the urban setting is usually one of constant change (buildings being built/demolished, improvements to roads, sewage systems, etc.) the maps available may not be accurate. Small units may find themselves operating off sketches and drawings made of the local operating area. Additionally, floor plans or blueprints may be used to plan the attack if available.

(4) Tactical Considerations

(a) Objectives. As mentioned before, rifle platoons are normally required to attack within a designated zone. They can be tasked to provide security/isolate the objective (Security Force), support the assault of another platoon by fire or a supporting attack (Support Force), or to conduct an assault themselves (Assault Force). A platoon will most likely be assigned one large building (a warehouse, apartment, or office building) or a group of small buildings (several houses along a street) as an objective. The platoon commander will subsequently task his squad's portions of that objective. For example, for the larger building each squad may be assigned one level of a multi-story building. For a group of smaller buildings, each squad could be assigned an individual house along that street. In addition to the objective assigned by the company commander,

the platoon commander may find it necessary to attack and clear an ***intermediate objective***. This would be a building, or group of buildings, enroute to the final objective that must be cleared to prevent possible counter-attacks and avoid bypassing pockets of enemy resistance . The intermediate objective, once secured, can also be used to support the attack/clearing of the final objective.

(b) Formation. The formation used by the platoon commander depends on METT-T. Once a unit enters an urban area, control of formations is heavily decentralized. Movement as an entire platoon or squad may be impossible once in contact or due to the broken nature of the urban terrain. Use of overwatch, bounding, and leap-frogging units are techniques that may be used to facilitate movement within the urban area. Once in the attack squad and fire team leaders adopt their own formations which provide for control, flexibility, firepower and all-around security.

(c) Time of attack (TOA). As always, unit leaders should plan to attack when the enemy is at their weakest or when they least expect an attack such as during hours of reduced visibility. For command and control purposes, perhaps the initial phases (I and II) are conducted during reduced visibility. Then, as the sun begins to rise, the unit is poised to conduct subsequent clearing operations to take advantage of the light to clear room to room. Other considerations may be a period of time when the street lights are turned off or when power to the objective area is interrupted. Perhaps the subways or underground trains do not operate during certain hours of the night, thus affording an avenue of approach during that time.

(d) Use of a reserve. Generally speaking, a rifle platoon will not have enough manpower and assets to maintain a legitimate reserve in the attack. All of the platoon's squads will find themselves occupied either providing security, supporting the assault, or conducting the assault. **Each squad, however, must be prepared to assume the role of the assault force. Rotation of the squads should be planned for in advance.** This will require each squad being trained in all of the different tasks associated with each force.

(e) Engineers. Engineer support will likely be in short supply during urban operations. Therefore, Marines must receive basic training in the use of demolitions and breaching equipment prior to conducting MOUT. If engineer support is available, the small unit leader (platoon commander) can leave them together and place them in general or direct support. In this role, engineers would be best suited as part of the support or assault force and used to clear obstacles and create breaches. A third option would be to attach small teams (2-4) of engineers to the rifle squads. This would enable rifle squads to employ the engineers on the spot when needed.

(f) Civilian population. If not a tactical consideration, certainly a significant adjunct consideration, is the presence of a civilian population in the area of operations. Civilians may remain in the urban area even if it has been the scene of heavy combat unless evacuated by local officials or forced out for some other reason. Civilian presence can hamper or limit a unit's ability to bring firepower to bear. Although their presence may be of pure coincidence, enemy forces may also use the civilian population to achieve a tactical advantage. For example, the enemy defender may use civilians to gather information, as a labor force, or even as a human shield. The mere presence of civilians in many numbers may influence operations. An example of this might be large numbers of civilians fleeing an urban area causing major avenues of approach to be unusable. These things may influence what areas are attacked, and what tactics and weapons are used.

(5) Fire support plan. When planning fire support, the commander takes advantage of every fire support asset available. Supporting fires are used in MOUT to isolate the objective area, support the assault, and support the clearing action. All available fires must be delivered on enemy positions that are adjacent to other buildings, as well as along those streets and alleys the enemy might use to reinforce the building under assault. Fires are employed to disrupt the enemy's established defenses and screen friendly maneuver in order to maintain the momentum of the attack. All friendly movement must be supported by fire because enemy fields of fire are generally short and accurate. Procedures for designating the forward line of troops (FLOT), marking targets, shifting fires, and communicating in the urban environment should also be considered.

7. **RIFLE SQUAD IN THE ATTACK.** Rifle squads are generally the smallest unit to operate independently in a MOUT environment. To gain entry into and subsequently clear a building, the squad task organizes into **an assault element, a security element, and a support element.**

a. **Assault Force task organization**. The mission of the assault force is to close with the objective, make the initial breach or entry, gain a foothold, and begin clearing if it is within the force's capabilities. To better accomplish this, the assault force will further task organize itself into an ***assault element, a support element, and a security element***. (See Figure 4.) Each one of these elements is a fire team in size. The assault element makes the initial entry and gains the foothold. The support element supports this by providing suppression immediately around the point of entry. As the assault and support *forces* are interchangeable at the platoon level, so are the assault and support *elements* at the squad level. The security element can assume the mission(s) of each of the other elements if another squad within the platoon or another platoon within the company is providing security.

(1) Assault Element. The **assault element** is divided into a *clearing team* and a *covering team.* (See Figure 4.) The assault element is responsible for the clearing actions of the squad. The clearing team (rifleman, assistant automatic rifleman) makes initial entry into the building/room supported by the covering team (fire team leader, automatic rifleman). The covering team, as the name implies, "covers" the movement of the clearing team. As Marines are injured or killed during the clearing action new assault elements are formed from other fire teams in the squad or from remaining squads in the platoon to

maintain momentum. Normally, the support force's secondary role is to become the assault element; however, based on the situation any of the elements may be designated as the assault element. The squad leader may rotate the fire team acting as the assault element as successive rooms are cleared to allow the lead fire team to regroup. The important thing to remember is that assault element responsibilities will have to be rotated and must be planned for in advance.

Figure 4

(2) Support and Security Elements. The support element provides supporting fires for the assault element and may contain attached machine guns or other weapon systems. The support element will most often provide suppressive fires on the building to be assaulted to allow the assault element to close with the objective. They may also provide suppressive or fixing fires on adjacent buildings for the same purpose. The security element will help isolate the objective by positioning fire teams to prevent the enemy from escaping from or reinforcing the objective building. They may also provide security within the building once a foothold has been established and clearing has begun. In this role, the security element may be tasked to maintain security for a portion of a building that has already been cleared by the assault element to prevent the enemy from reoccupying those positions. The responsibilities of both the support and security elements can be assumed by other units in the platoon. If this is the case, then an additional fire team could be added to the assault element.

b. **Entering and clearing a building**. The squad will probably not have a floor plan of the building it is assaulting. Therefore, squads must aggressively enter and clear their assigned buildings, or portions of buildings, during the attack. The procedure used must be coordinated, systematic and methodical to ensure a complete room-by-room search and clearance of the building. Several of these techniques are described below. Regardless of the method used, **an assaulting Marine should check all holes, apertures, doorways, and windows for booby traps before entering**.

(1) Entry on the uppermost level. Entry at the top floor of a building *is preferred* because it is easier to fight down through a building than up. Gravity and the building's floor plan become assets when throwing hand grenades and moving from floor to floor. Also, an enemy who is forced to the top of a building may be cornered and fight desperately, but an enemy who is forced down to the ground level may withdraw from the building, thus exposing himself to friendly fires from the outside. Various means may be used to reach the top floor or roof of a building. Ladders, rain spouts, vines, and holes blown in walls of adjoining buildings are some of the more common devices used. Toggle ropes and grappling hooks can also be useful. Movement may even be accomplished by jumping from roof to roof, if the situation permits.

(2) Entry on a middle floor. If entry at the top floor is not possible, entry should be made at the next highest point, using the techniques described above. The room at the point of entry is cleared first. The squad clears to the top floor and then works down, clearing each floor room by room.

(3) Entry at ground level. When the situation necessitates ground level entry, Marines should avoid entry through windows and doors because both can be easily booby-trapped and are usually covered by enemy fire. Demolitions, artillery, tank fire, antiarmor weapons fire, or similar means are used to create a new entrance to avoid booby-traps. *Rapid entry is essential to follow through on the effects of the blast and concussion.* The room at the point of entry is cleared first, then the ground floor. The assault element(s) clear to the top floor, clearing each floor, room by room.

c. **Room clearing techniques**. There are many options available to an attacker for entering and clearing a building. Regardless of the method selected, each Marine must clearly understand his position and duties within the team. Rehearsals and SOPs down to the smallest unit level are vital in preparing a unit to fight in urban terrain. **Room clearing requires speed, shock and violence of action regardless of the methods or techniques used**. For explanation purposes, in the following paragraphs the rifleman will be referred to as Shooter Number One, the assistant automatic rifleman as Shooter Number Two, the team leader as Shooter Number Three, and the automatic rifleman as the Shooter Number Four.

(1) Method of entry. The basic unit used in each of these methods is a fire team (assault element), fighting as a part of the squad. The method selected depends on the size and layout of the room. Each method describes how a clearing team crosses the threshold into the room. There are two basic ways Marines do this: **Button Hook and Cross.** (See Figure 5.) A button hook means they curl around the entry point. A cross means they move across the point of entry. A third technique that will have to be used when Marines assault the room and start their movement from the same side of the opening is a **Combination** of the button hook and cross. Figure 6 graphically portrays a combination technique that uses both button hooking and crossing. With each method, the assault element positions itself on one side of the door in what's known as a ***stack*** (used when the door is open already), or splits on both sides of the door, which creates a ***split stack*** (used when the door is closed), prior to entering the room. (See Figure 7.)

Figure 5 Figure 6

(2) Task Organization. Assault elements can utilize two-man, three-man, or four-man room clearing techniques, depending on size of the room, the need for additional firepower, the need for security outside the room, or due to possible obstructions within the room. The assault element should be well versed in all of the methods and will not be able to determine which method is needed for any given situation until they actually face them.

(3) Throwing Grenades. Whenever possible, the assault element should use grenades to assist in room clearing. The *preferred technique* for Marines is to throw a concussion or fragmentary hand grenade into the room so hard that it

skips and bounces, making it difficult for the enemy to pick it up and throw back. The *least preferred technique* is to cook off a concussion hand grenade by removing the grenade's safety pin, releasing the safety lever, counting off two seconds by thousands (one thousand and one, one thousand and two), and then throwing the grenade into the room. Cooking off grenades will **only** be used as appropriate during combat, **never** during training. If concussion grenades are not available, then fragmentary grenades may be used; however, extreme caution should be used. **The use of any grenade within a building must take into consideration the construction type and building materials used to prevent friendly casualties.**

Figure 7 Figure 8

(4) Nonverbal and Verbal Alerts. To alert the assault element that a grenade is about to be thrown, the team member with the grenade visually shows everyone else that he is about to throw a grenade and a visual acknowledgment from them is received. A nonverbal alert will ensure that the enemy surprised when the grenade is thrown. If the situation demands, a voice alert can be used, but the element of surprise will probably be lost. When a voice alert is used, the verbal alert is "FRAG OUT." When an enemy frag is identified, friendly forces shout "GRENADE." This will allow Marines to distinguish between warning for outgoing and incoming grenades. Other verbal alerts are used to announce your intentions when entering rooms/buildings that is occupied by friendly forces. This is done to ensure that they know you are coming in and that you don't surprise them and draw fire. This technique is also used when exiting a room/building where Marines continue to provide security outside. When a Marine desires to enter, he announces "3-MAN COMING IN". The Marines inside the room would reply "COME IN" The Marine would then move in to the room/building. The same technique is used for exiting.

(5) Two-man room clearing.

(a) General. Two-man room clearing is used when it is necessary for the other two Marines in the assault element to maintain security outside of the room, when the threat level is low, or when the room structures are so small that more than two within a room would cause conflict.

(b) Conduct. In this example the two Marines in the clearing team are ***stacked*** on the same side of the opening. If a grenade is used, as soon as it explodes, Shooter Number One steps across the threshold and clears his immediate area. Depending on the configuration of the space he is clearing and the immediate enemy situation, he will buttonhook or cross. He engages targets from the ready carry position. Shooter Number Two follows immediately behind Shooter Number One and executes the opposite move (buttonhook, cross) of Shooter Number One. Both shooters will clear the immediate area and along their respective walls, starting from the nearest respective corner, continuing to the farthest respective corner, and ending up in the middle of the room. Also, the overheard area(s) are checked. Shooters use the pieing technique to systematically clear the room by sector. (See Figure 8.) If a grenade is not used, the technique remains the same. However, the shock effect of the grenade is replaced by the speed of entry. The Number One Shooter aims low and "pies off" what he can of the room, while the Number Two Shooter aims high. Then, on a prearranged, rehearsed signal, the clearing team moves quickly into the room using the same techniques that were used with a grenade. The key to success in this technique is the nearly simultaneous entry of both Marines. Now the clearing team can call for the covering team to enter or they can exit and move on to the next room.

(6) Three-man room clearing.

(a) General. Three-man room clearing is used in times when a third man is needed inside of a room. This may happen after the conduct of two-man clearing discovers another adjoining room and a third person is needed to help in clearing it. Security must be maintained outside the room by the fourth team member.

(b) Conduct. Clearing a room with three men involves the same procedure as the two-man clearing team, with a third Marine (from the Covering Team) following immediately behind Shooters Number One and Two. Shooter Number Three moves to one of the door and establishes a center sector of fire. The remaining covering Marine provides outside security.

(7) Four-man room clearing.

(a) General. Four-man room clearing is used when security is provided by another element to cover the outside of a room or when the expected threat level necessitates extra firepower inside the room.

(b) Conduct. When four Marines (the entire assault element) are used to clear a room, outside security should be established by another assault element or the security element. The two-Marine clearing team procedures are used for initial entry into the room. In the stack, Shooters Number Three and Four line up behind One and Two. In the split stack, Shooter Number Three and Four stack up opposite One and Two. Shooters Number Three and Four follow One and Two and establish a center sector of fire. (See Figures 5 and 6.)

(8) Hallway movement. Long hallways with several doors opening into the hallway create a series of significant threats for a unit clearing the building. Hallways of this type are one of the most dangerous places inside a building. When clearing a hallway, **the principle of all-around security must be maintained**. Once a Marine covers a threat, he must remain focused on that threat until relieved by another Marine. The same techniques and task organization used by the squad in room clearing are applied to movement in hallways. Three types of hallways that can be encountered are a straight hallway, the L-

shaped and T-shaped hallways.

(a) Clearing a Straight Hallway. To proceed down a straight hallway the assault element will need to clear the rooms adjoining the hallway as they continue to move forward. If rooms are not cleared as they proceed, enemy positions could be bypassed and result in the assault element be attacked from behind. Figure 9 graphically portrays how the assault element can advance along the hallway, clearing the rooms as it goes. Shooters One and Two will take a knee and cover the doors to their immediate front. Shooters 3 and 4 will take a step towards the center of the hallway, remain standing, and cover down the long axis of the hall. If the assault element is alone, they will have to clear one room at a time to maintain security in the hallway. If another team is behind them, they could clear rooms on opposite sides of the hall simultaneously while the team to the rear moves forward and takes over the responsibility for security. When the team exits the rooms they just cleared, they will fall in behind the team that has taken the lead and be prepared to provide security for them. In this manner the teams will leapfrog down the hallway as they clear.

Figure 9

(b) Clearing an L-Shaped Hallway. When a clearing team encounters an L-shaped hallway, each shooter in the team takes a dominant position. Shooter Number Two will aim his weapon to cover the dead space. Shooter Number Two, with his weapon covering the dead space, pies as far as possible and moves forward to increase his angle of fire further into the dead space. Shooter Number One moves accordingly with Shooter Number Two. Shooter Number Two stops pieing just before he reaches the position where he cannot cover the dead space. Shooter Number One stops short of the hallway and goes to a kneeling position. Shooter Number One says, "READY!" Shooter Number Two then says, "MOVE!" and both shooters move simultaneously to clear the hallway around the corner. Shooter Number Two remains standing, and Shooter Number One remains kneeling as he pivots around the corner of the wall into the hallway.

(c) Clearing a T-Shaped Hallway. Both shooters approach the T-shaped intersection together, pieing their individual sectors while maintaining the ready position with the weapon. Both shooters move to their dominant positions without entering the intersection. Shooter Number One clears his sector of fire and then says, "READY!" Shooter Number Two clears his sector of fire and then says "MOVE!" Both shooters buttonhook into their next positions. Both shooters clear their immediate areas along their respective walls, starting from the nearest respective corner and continuing to the farthest respective corner. Both shooters establish dominant positions that give them control of the hallway and the doorways leading into the hallways. The covering team can then be called forward to provide security while the clearing team begins systematically clearing down the hallway.

(9) Clearing stairwells. Stairwells present another difficult problem for squads assigned the task of clearing a building. Ideally, stairwells are cleared from the top down. However, this approach will probably be the exception and not the rule in most operations. Again, the principle of all-around security is paramount. The squad leader should normally have only the clearing team on the stairwell at any given time until each landing is secured. Shooter Number One leads upstairs, one step ahead of Shooter Number Two (Figure 10). Upon reaching the point just before he can be engaged from above, Shooter Number One turns around and covers overhead. From that point, Shooter Number One ascends the stairs, moving backward while covering behind and above. Shooter Number Two follows Shooter Number One upstairs, one step behind and to the side of Shooter Number One. When Shooter Number One turns to cover overhead, Shooter Number Two remains oriented to the front, covering directly up the stairwell. The clearing team's speed of movement is determined by Shooter Number One. Marines pie as much of an area as possible before ascending each step. Use of grenades when clearing up stairwells must be done with extreme caution because defenders may be able to easily kick grenades back down the stairs.

Figure 10

8. **DEFENSIVE OPERATIONS**. In urban combat, the defender possesses key advantages over the attacker. The defender can shape the battle space to his advantage by maximizing the natural restrictions and obstacles found in the urban environment. In addition, the defender in urban combat usually possesses detailed knowledge of the terrain. This forces the attacker to expend exorbitant amounts of time, supplies, equipment, and manpower. For these reasons, history has shown us many examples of the defender repelling a numerically superior attacker in an urban setting.

Given the current roles and missions of the Marine Corps, defense within an urban environment has occurred several times in the recent past and remains a very likely requirement in the future. While our involvement in military operations other than war (MOOTW) may not always require us to go on the offensive, **Marines will always have to protect and defend themselves**.

The fundamentals of defending in urban terrain are generally the same as any other environment. However, certain fundamentals require added emphasis. In addition, the complexities involved with the defense of a built-up area require detailed and centralized planning. One must realize that most operations conducted in an urban environment will fall under the defensive umbrella. Combat service support units, like infantry units, will be expected to conduct effective defensive operations while maintaining their ability to support the combat arms element of the MAGTF.

a. The cover and concealment available, coupled with restrictions to normal observation and line of sight in urban terrain require special attentiveness to **all-around defense and mutual support** to counter enemy observation and infiltration.

b. Movement is generally restricted to the streets, roads, and alleys. Therefore, defending infantry seek to **barricade these and all other avenues of approach** to deny an attacking enemy freedom of movement and to canalize the enemy into established kill zones or engagement areas. At the same time, the defender must plan to improve his own ability to move within the built up area and even within certain buildings.

c. Surveillance of the flanks and rear is intensified, and the defense must be flexible enough to permit defense in any direction to prevent encirclement. **Three dimensional security**--above, below and adjacent to the defensive position--is imperative.

9. **REASONS FOR DEFENDING BUILT-UP AREAS**

a. **Denial of important strategic or political objective**. Capitals and cultural centers can be defended for psychological or national morale purposes even if they do not offer a tactical advantage to the defender.

b. **Retention of key economic centers**. In many countries, the nation's entire economic well being may depend on a few key cities.

c. **Control of avenues of approach**. Most avenues of approach to large cities are straddled by smaller urban centers. To get to the larger city, which may be the decisive terrain, the attacker must expend time and resources.

d. **Economy of force.** Since the defense is generally stronger in MOUT, it allows a smaller force to engage a numerically superior force.

e. **Concealment of forces**. Extensive cover and concealment provided by the urban center makes detection of forces difficult.

10. **REASONS FOR NOT DEFENDING BUILT-UP AREAS**

a. **Unnecessary to the defensive or offensive plan**. If the built-up area is too far forward or back in a unit's sector, is isolated, or is not astride the enemy's expected avenue of approach the decision may be made to not defend from there.

b. **Bypassable**. The nature of surrounding terrain will allow the enemy to easily move around the urban area.

c. **Inadequate structures for defense**. Extensive areas of lightly constructed or flammable buildings offer little protection for the defender.

d. **Adjacent dominating terrain**. If the urban area is small and there is dominating terrain next to it, the commander may decide to defend from that terrain.

e. **Better fields of fire elsewhere**. A commander that has extensive armor or long range antiarmor assets may choose to defend with at least part of his force from outside the built-up area due to the broken nature or the urban terrain.

11. **RIFLE PLATOON IN THE DEFENSE**. There are several considerations for formulating the platoon's plan of defense.

a. **Scheme of maneuver**. Rifle platoons are assigned either a **battle position** or **sector** in urban terrain, depending on the density of the buildings and frontage required to be covered by the company. In urban terrain, a rifle platoon will most likely be given the mission to provide or conduct the strong point defense of a building, part of a building, or a group of small buildings. The platoon's defense is normally integrated into the rifle company's defense. Large, strongly constructed buildings, such as courthouses, post offices or public utility buildings, may require occupation and defense by an entire platoon. The platoon commander assigns each rifle squad its sector of fire and its primary and supplementary fighting positions within the building. Squad supplementary positions may be inside the same building as the primary positions, or located in an adjacent building or buildings. In addition, the platoon commander determines the best employment of all available weapon systems, organizes an all around defense, and counterattacks or calls for a company counterattack to eject an enemy attacker who has gained a foothold. The platoon's flanks should be tied in physically or by fire with adjacent units. Figure 11 is an example operational graphic of a platoon defense in an urban environment.

Figure 11

b. **Fire support plan**. The rifle platoon commander integrates his fire support plan with his direct fires and obstacle plan. His fire support plan should have depth, engaging enemy forces at the effective ranges of his weapons systems through the engagement areas to the FPFs. The platoon commander assigns overlapping squad sectors of fire to cover avenues of approach and to provide mutual support between positions. PDFs are assigned to squad automatic weapons and grenade launchers in order to cover streets, roads and alleys and to cover dead space along machine gun FPLs.

c. **Engineering**. The platoon commander's obstacle plan integrates and complements the company's engineering

effort, which usually includes: countermobility, survivability, and finally mobility for reserve/counterattack forces and/or movement of units to alternate and supplementary positions. The platoon constructs obstacles and barricades to block spaces between buildings and to seal windows, doors and holes leading into the defensive position. Streets to the front and flanks of the platoon's battle position or sector should be blocked by obstacles. Wire, command detonated mines, and debris found in the area, can all be used to augment the platoon's obstacle plan. All obstacles should be within observation and covered by fire.

d. **Security**. In an urban area, infantry units provide their own local security by aggressively patrolling, through the use of sentinel posts/listening posts, and by adopting the appropriate unit alertness posture while the unit prepares for the defense. In MOUT, the security effort is sighted to cover likely enemy avenues of approach from the front and flanks, and when required, the rear, underground, and overhead.

12. **SQUAD DEFENSIVE CONSIDERATIONS**. The fundamentals of defensive combat in an urban environment at the squad level are generally consistent with defensive combat in any other environment. Once the squad leader is assigned a squad sector of fire and a building or buildings to defend, he then assigns his fire team's sectors of fire. Squad automatic weapons are employed at ground level to achieve optimum grazing fire. He supervises the construction of firing ports and barricades within and around his building, rehearses contingencies for moving within and around buildings, and maintains proper security focus throughout preparation of the defense. At a minimum, leaders must consider the following factors prior to establishing a defense.

a. **Cover**. Select a position or building providing protection from direct and indirect fires. Reinforced concrete or brick buildings are preferred. Avoid wooden buildings. Improve positions with sandbags or rubble and provide overhead cover. Reinforce ceilings. Prepare dummy positions if time allows. Block or barricade doors, hallways, stairs and windows that you will not be using. Chicken wire is positioned over windows and other openings to prevent the enemy from throwing grenades into the building.

b. **Dispersion**. Defending units should establish positions in more than one room and, depending on the size of the structure, in more than one building which permits mutual support and overlapping sectors of fire.

c. **Observation**. Depending on the type of urban terrain defended, observation is usually restricted by the building/structure patterns and proximity to the defended unit. However, observation can be enhanced by rubbling. Minimally, the position selected should permit observation of the adjacent unit's sector of fire and critical areas surrounding the unit's defensive position.

d. **Covered routes**. Defensive positions should have at least two covered and concealed routes that permit resupply, medical evacuation, reinforcement, or withdrawal from the building. Blow with demolitions or cut mouse holes between rooms and through floors for covered routes to alternate and supplementary positions. Use existing construction materials to fashion hasty ladders for use between floors.

e. **Concealment**. As a passive security measure, camouflage defensive positions within available means. All individual firing positions should be camouflaged and concealed. It is also important to establish firing positions back and away from windows and doors when firing to avoid enemy detection. Dusty areas can be covered with blankets or wetted down with water to keep dust from rising when weapons are fired. Windows should be covered with material to prevent enemy observation. Lace curtains or a piece of cloth hung across a window will hide a defender in a darkened room, but allow observation and firing outside. Remove glass from windows.

f. **Fields of fire**. To prevent isolation, positions should be mutually supporting and capable of firing in all directions. Clearing fields of fire may require destroying adjacent buildings with explosives, munitions or engineering assets such as bulldozers. Machine gun positions should have wire screens (cyclone fencing) placed to the front to deflect hand grenades and to prematurely detonate rockets and missiles from exploding within the position.

g. **Fire hazard**. Defending units avoid establishing positions in old or unstable buildings. Shut off gas and electricity when occupying buildings to prevent gas and electrical fires. If there is a fire hazard, fire fighting equipment should be positioned throughout the unit's defensive position within the building.

h. **Logistics**. If a unit expects to defend for an extended period of time, food, water, ammunition and medical supplies should be stockpiled at primary, alternate, and supplementary positions.

i. **Time**. Hardening positions and constructing obstacles with an urban area will take longer than in other environments because of the extent of protection needed.

13. **WEAPON EFFECTS AND EMPLOYMENT**. As with any other type of operation, a unit leader plans to use all available weapon systems - organic, supporting, and attached. The three dimensional and naturally restrictive nature of urban terrain requires that every weapons system be employed to maximize its effects. Weapons should be employed to create and/or exploit tactical advantages. Street patterns and building location influence the plan of attack or defense by creating "city canyons" which are compartmentalized portions of the area. City street width, *line of sight* distances, and inter-visiblity problems caused by building angles can all influence the selection of firing positions and the effectiveness of weapons. Buildings that may *mask* your

fires, key terrain, critical areas, and building construction should also be considered when deciding how to employ weapons. Below are some of the effects of and employment considerations for weapons in an urban environment. For more detailed information concerning weapon effects and employment, refer to MCWP 3-35.3, Appendix B.

a. **Weapon Effects**. Obviously, unit leaders will have to take into consideration the effects of the specific weapons under their direct control and those they may bring to bear in the urban setting. This will vary and will be influenced by availability, logistics, effectiveness, and suitability as they apply to the current situation faced by that leader. Below are some considerations concerning the effectiveness of weapons in the urban environment, in general.

(1) Hard, smooth, and flat surfaces are characteristic of urban targets. Rounds usually strike these surfaces at some degree of obliquity. This reduces the effectiveness of the round and increases the chance of ricochets. In addition, the above also means that up to 25 percent of impact-fused explosive rounds (i.e., 40mm grenades) will not detonate when striking such targets at an angle.

(2) Engagement ranges in MOUT are close. Historically, about 90 percent of all engagements occur at 50 meters or less. Minimum arming ranges and unit safety from back blast or fragmentation must be considered.

(3) Because of the close nature of most engagements and the broken nature of the urban terrain, the time available to engage targets will be short. Marines have difficulty engaging with deliberate, well-aimed shots without prolonged exposure to enemy observation and fire.

(4) Depression and elevation limits for some weapons create dead space. Tall buildings form deep canyons and make engaging targets in the upper portions of these buildings difficult or impossible with such weapons. Positions that have depression limits may not be able to engage enemy positions in basement or cellar positions.

(5) Smoke from burning buildings, dust created by explosions, shadows from buildings, and lack of ambient light penetrating inner rooms all combine to reduce visibility. Targets, even at close range, may be difficult to see. The effectiveness of night vision goggles and even thermal sights may be greatly reduced.

(6) Specific rounds and munitions must be evaluated for their effects against and penetration of certain types of building construction when planning. This will reduce the possibility of friendly fire injuries. In addition, leaders must evaluate the risk of starting fires. The benefits of using tracer ammunition, which can be shot from a number of different weapons systems, must be evaluated against the likelihood and consequences of starting fires.

(7) The presence of power lines must be considered when employing wire guided missiles. Guidance wires that cross "hot" power lines can short out and cause the missile to become erratic.

(8) Modern engineering and design improvements mean that most large buildings constructed since WW II are resilient to the blast effects of demolition and artillery attacks. Even though portions may be rubbled or burned, buildings may hold their structural integrity.

(9) The effects of different types of weapons can also affect defenses and the type of protection constructed or used. Many materials normally found in an urban environment can be utilized to effectively protect against modern weapons and their effects. Furniture and building materials taken from interior walls can be fashioned into overhead cover to protect from the effects of artillery, mortar, or demolition attacks. Chain link fences can be placed in front of fighting positions to protect against RPGs and other shaped-charge warhead weapons. Sandbags are very effective against small arms fire, but may be limited in supply. Some effective alternatives to sandbags may be furniture, vehicle bodies, brick or cement rubble between boards, or 55 gallon drums filled with water.

b. **Weapons Employment**. The following are some employment considerations as they pertain to specific weapons normally found at the Rifle Company or Platoon level.

(1) M16A2 Service rifle. Rifles are the primary weapon to engage and kill the enemy in MOUT. In addition, rifles are particularly effective in suppressing enemy positions placed in individual windows and doors of buildings because of their ability to deliver accurate fire. To effectively engage small, fleeting targets requires a high degree of accuracy and weapons fired in the semiautomatic mode. Tracer ammunition may be used, once considering building construction and the risk of fires, by unit leaders to direct the fire of their units. Penetration of the 5.56 round is optimal at 200 meters. Because of the close nature of most engagements in MOUT, this penetration will be reduced. The 5.56 round, however, will easily penetrate materials commonly found on the interior of buildings (wooden doors, paneling, sheetrock, or plaster). The 5.56 will not penetrate brick and other masonry works initially, but successive rounds may.

(2) M249 Squad Automatic Weapon. SAWs should be employed using the same considerations as M16A2s. The penetration capabilities and limitations of the 5.56 rounds are the same. The SAW, however, provides a much greater volume of fire and is therefore well suited for suppression of enemy positions and can be utilized to isolate or suppress objectives. The increased rate of fire will also have a corresponding greater destructive effect on buildings and building materials.

SAWs are cumbersome in the assault because of their length and weight. This does not mean that they will not participate in the clearing of buildings, rather they should be placed in the covering team of the fire team.

(3) M203 Grenade Launcher. The M203 can be effective at destroying point targets in the offense or defense. The destructive force of the 40mm HE or HEDP rounds can be a significant combat multiplier in MOUT. Blast effects and fragmentation within enclosed rooms may be amplified. In addition, the fragmentation effects may be multiplied by the added fragmentation created by building materials (masonry chips, wood splinters, etc.) Because of the close nature of the combat in MOUT, care must be taken to avoid friendly forces being affected by fragmentation, and attention must be paid to minimum arming distances of the rounds. Another consideration is interior wall construction. M203 rounds may pass right through light building materials like sheetrock or paneling without detonating. The array of M203 rounds make it a good weapon for delivering covering smoke, signals, illumination, and CS. Because of the trajectory of the round, the M203 round can be delivered into defilade such as behind walls, piles of rubble, or buildings. M203 gunners should be proficient enough to deliver fire through windows, doors, and small openings.

(4) M240G Machine-gun. The M240G is the rifle company's primary organic direct fire weapon used to suppress designated targets/areas, isolate objectives, or establish kill zones down streets and alleys. Employment in the offense and defense are the same as any other environment with some special considerations. Streets, alleys, and open areas normally found in an urban environment provide an opportunity to achieve grazing fire seldom equaled in other types of terrain. To achieve maximum grazing fires, MGs ***should be*** **positioned on the lower levels, in basement, or cellar firing positions**. Rolling urban terrain, buildings, rubble, vehicles, and other things may all present obstacles to MG fire and necessitate them being positioned higher within buildings. The M240G is a cumbersome weapon making it difficult to use while clearing a building. The weapon can be fired from the assault fire position, utilizing the bipods, or employed on the M122 tripod for increased accuracy and stability. The penetration capability of the 7.62 round is also negatively affected by the typical short distance engagement. The 7.62 round, however, penetrates most light construction materials easily and will penetrate most typical urban walls with continued and concentrated fire. It will not penetrate steel reinforced concrete and dense natural stone structures.

(5) Heavy Machine guns. Heavy machine guns are often employed on their vehicular mount both in the offense and defense. If necessary, they can be mounted on the M3 tripod for use in the ground role or in the upper levels of buildings. As with the M240G, the biggest thing that will affect the employment of heavy machine guns will be the limited availability of long range fields of fire. Additionally, grazing fire of the M2 .50 caliber machine gun may be obstructed by rubble. The .50 caliber machine gun's penetration will be affected by the shorter ranges, but not as much that of the M240G. The .50 caliber MG is capable of producing significant amounts of damage to structures with continued, concentrated fires. The MK-19 40mm Automatic Grenade Launcher is capable of delivering large volumes of 40mm grenade fire into defilade, behind rubble and buildings. It is also capable of producing significant damage to buildings. The MK-19 may be affected by the short engagement distances, and the minimum arming distance of the rounds must be taken into consideration. Also, as previously mentioned, as much as 25 percent of the rounds fired from the MK-19 may skip or ricochet off hard surfaces without detonating.

(6) Rocket Launchers and Anti-Tank Guided Missles(ATGM). The SMAW and AT-4 are the primary rocket launchers that will support a rifle company in MOUT. Dragons, Javelins, or TOWs may also support a company. These will be used to destroy enemy fortifications and light armored vehicles. SMAWs and AT-4s are extremely effective at destroying enemy positions within buildings. To maximize their effectiveness, they should generally be aimed beside or at the base of the intended target opening (window/door). If shot directly into the opening, the warhead may detonate behind the enemy or pass through interior walls, both of which will lessen the fragmentation effect of the round. When exploded next to the opening, the blast effect directly on the other side of the wall is magnified by the fragmentation produced from the construction materials themselves (concrete, brick, or wood splinters). SMAWs are also capable of creating man-sized breaches in exterior walls of most buildings. It will be least effective in this role against steel reinforced concrete and heavy natural stone walls. Regardless of the type, most masonry walls may require successive shots to create a man-sized hole. Dragons (Javelin) and TOWs are normally employed in a conventional role to cover likely mechanized avenues of approach and to destroy specific point targets during the attack or defense. Because of their shaped charge warheads, they will be less effective at creating large holes in structure walls and the fragmentation created is limited. Much research has been done concerning the back blast of these types of weapons in MOUT. Generally, it has been found that the back blast created offers little danger to the gunner/s even in enclosed positions. Damage to the room and/or structural integrity of the building can be reduced by ensuring adequate ventilation (open window/door). Consideration should be given, however, to other occupants of the building. More significant is the danger created by back blast when fired outside in MOUT. Streets and alleys tend to canalize the back blast effects. Dust, debris, and other objects created from urban warfare will also become problematic as they are kicked up and blown around by the back blast. Minimum arming distances will be another consideration to take into account. To ensure sufficient distance is provided to allow the warhead to arm itself, rocket launchers and ATGMs may need to be placed in the upper levels or on rooftops. Shooting down from these positions will also be more effective against armored vehicles. Thermal sites on the Dragon, Javelin, and TOW may be of great utility even during the day because of their ability to observe through smoke and dust.

(7) Mortars. Mortars are high-trajectory weapons. This makes them well suited for urban combat due to the height of buildings and the natural "canyons" they create. Mortars can be employed against enemy positions on roof tops, behind buildings, or in other defilade positions. Mortars can be used to fix enemy positions, isolate objectives, suppress and destroy enemy positions or formations in the open. Suppressing enemy positions within buildings may be difficult or impossible due to building construction. Conversely, mortars may penetrate the roof top or cause significant structural damage to lightly constructed buildings. To deny the enemy roof top positions or limit the amount of rubble produced, HE/VT may be used. The

ability of the unit calling for fire to observe the mortar fire may be reduced due to buildings or rubble.

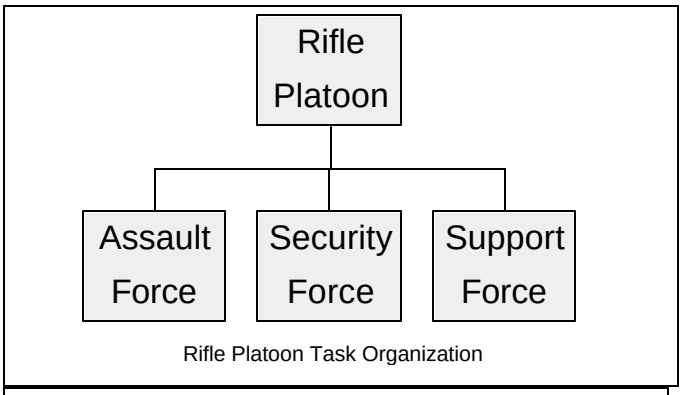
(8) Armor/Mechanized Assets. In the offense, mechanized assets may be used to isolate the objective, destroy point targets, or suppress enemy positions. Tanks, AAVs, and LAVs are extremely lethal in a direct fire role against enemy armored vehicles and fortified positions. The capabilities and limitations associated with armor and mechanized assets remain the same in MOUT as they do in other environments. Additional roles these assets may fill are smashing barricades, establishing mobile road blocks, acting as evacuation or civil disturbance platforms, and logistics carriers. The main armament of armor and mechanized vehicles can have devastating effects on buildings. In addition, armored vehicles also have secondary weapons, medium and heavy machine guns, that can be used to support the attack or defense. Some mechanized assets also bring to the MOUT battle field additional thermal sights that can be employed similar to the Dragon, Javelin, and TOWs. It is important to remember that with all the inherent strengths armored vehicles have, urban terrain is a very dangerous environment for them to operate within. The broken nature of the terrain, elevated firing positions, and limited maneuver space can allow the enemy to get close to armored vehicles and inflict serious, if not fatal damage. **In the offense or defense, the infantry bears responsibility for protecting armored and mechanized vehicles from enemy dismounted armor-killer teams.**

(9) Artillery/Naval Gunfire. Because of their relatively flat trajectory, artillery and naval gunfire are limited in their ability to suppress or destroy point targets within an urban area. Both will have difficulty hitting targets hidden within buildings or in the natural defilade created by the buildings. Use of laser-guided munitions (Copperhead) may be useful to engage targets with pinpoint accuracy, but again the masking of those fires may be a problem. Artillery and NGF can be used to isolate urban centers or areas within the built up area. They can also be used to illuminate areas with the city. Both artillery and NGF, when fired within urban areas, will create significant amounts of rubble and will cause considerable damage to structures. This may hinder follow-on operations and should be considered. Artillery may be used in the direct fire mode to rubble buildings or create a breach point. Depending on building construction, the danger of fires started by artillery and NGF should also be considered. Rules of Engagement(ROE) may prohibit the use of these fires within all, or a portion of the urban area.

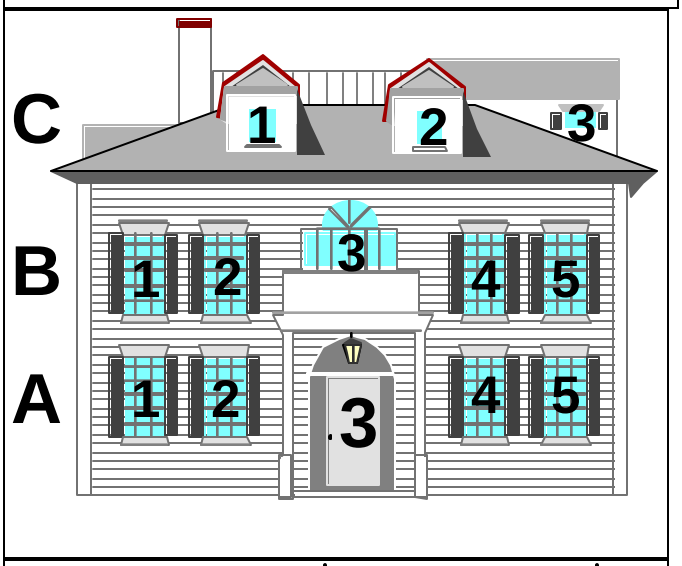
(10) Nonlethal Weapons. Much progress has been made in recent years on development of nonlethal weapons and research continues to be done. One reason that this subject has received so much attention has been the need for dealing with large numbers of people when deadly force was not an option or not the best option to choose first. MOUT is an area where nonlethal weapons may be of great assistance due to the large number of people associated with urban areas. Nonlethal weapons may be an effective way of dealing with an enemy located amongst a civilian population without putting civilians at risk. Even without the presence of civilians, some nonlethal weapons may be an effective way of dealing with the enemy. For example, CS gas could be delivered by any number of ways into a building containing enemy to drive them out of their positions. Pepper spray or stinger ball grenades may be substituted for fragmentary or concussion grenades when clearing a building.

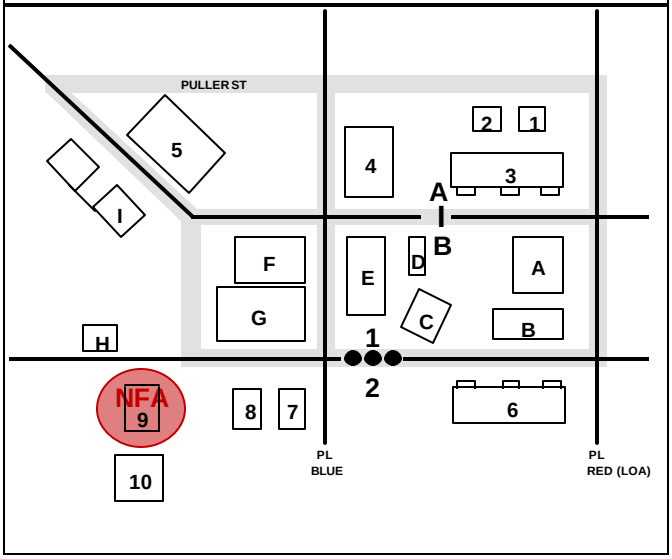
14. **COMMUNICATION**. The ability to communicate is vital to success in MOUT. Command and control of units in MOUT is difficult and is therefore usually decentralized due to the diverse nature of building construction and maze-like attributes of an urban area. Buildings and power lines in an urban area often interfere with radio communications. While wire and messenger are frequently the only reliable means of communication, there are also several different, innovative communication techniques available--Marines are limited only by their imagination and ability to improvise. In addition to voice, hand and arm, messenger, radio, and wire, platoon commanders should consider using the following materials to assist in signaling higher, adjacent and subordinate units: *air panels, flags, chemlights, spray paint, engineer tape, chalk, etc.* When in the defense, land lines should be laid through the buildings for primary, alternate, and supplementary positions. Radio antennas should be hidden by placing them next to walls and away from windows or exposed areas, or among existing antennas.

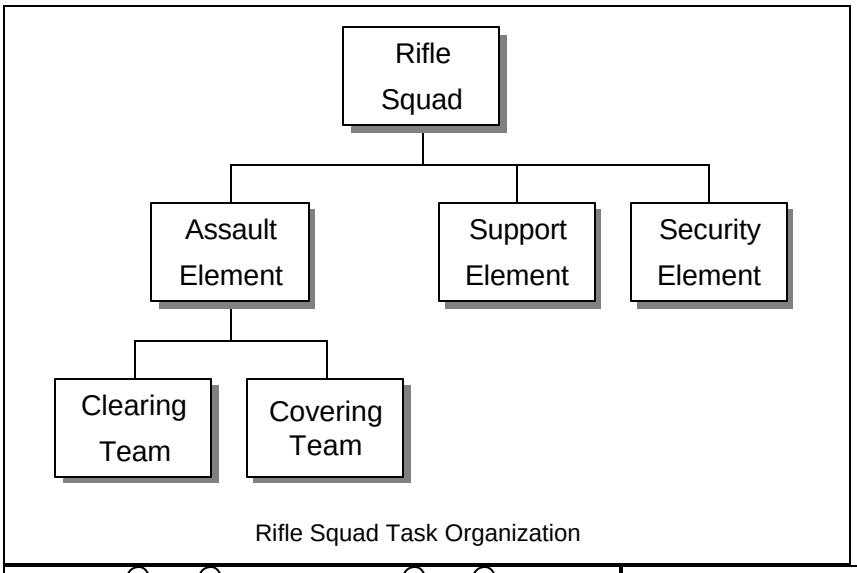
15. **SUMMARY**. Military operations on urbanized terrain are a complex, manpower intensive form of combat. The techniques and planning considerations presented in this class are only a guide. Ultimately, training and experience will help you develop the skills necessary to be successful when fighting in MOUT. You will have an opportunity to train in an urban environment during *B0386.1 MOUT Field Exercise, B0386.2 Night MOUT Field Exercise, B0351 Urban Patrolling Field Exercise,* and *B0392.1 WAR Field Exercise.*



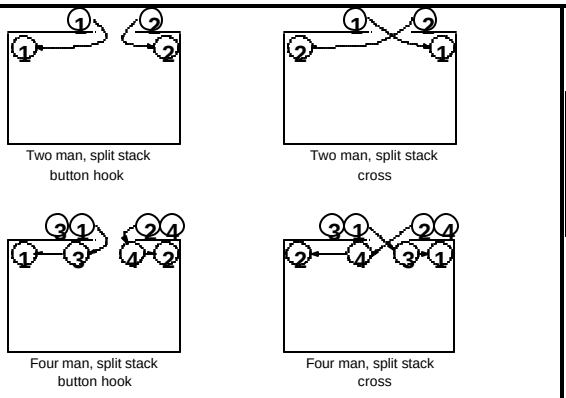
Rifle Platoon Task Organization

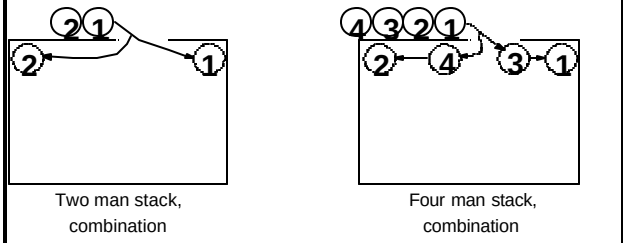


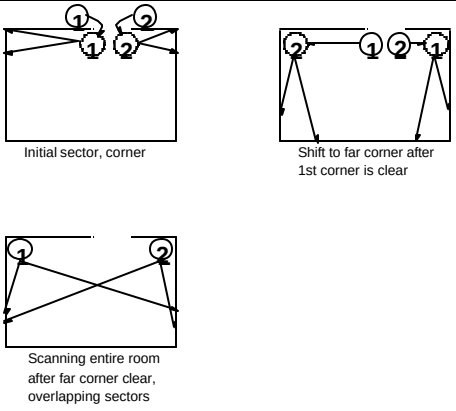


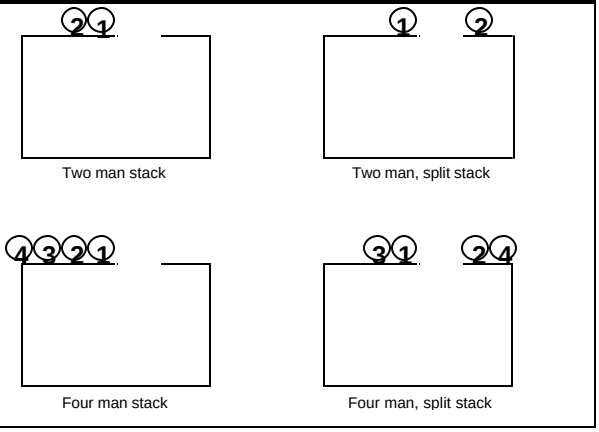


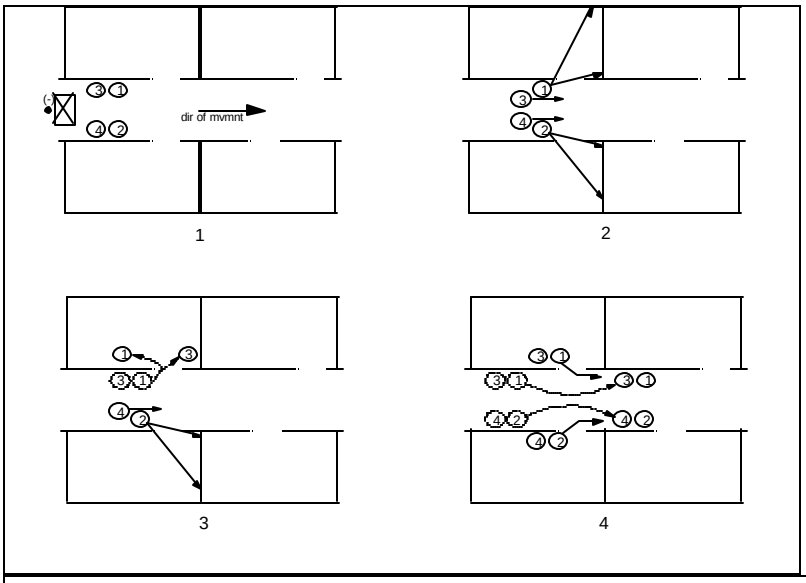
Rifle Squad Task Organization

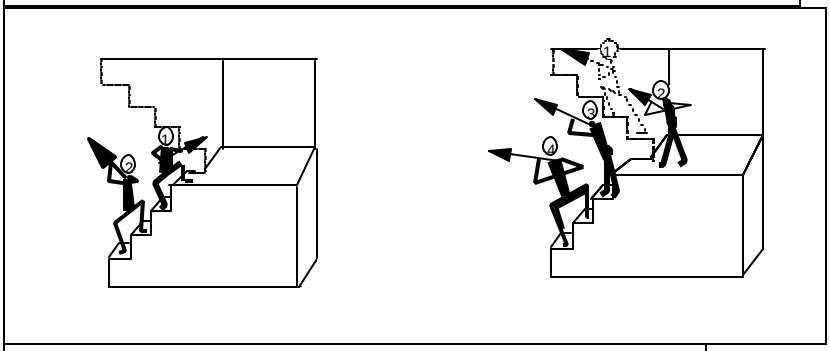


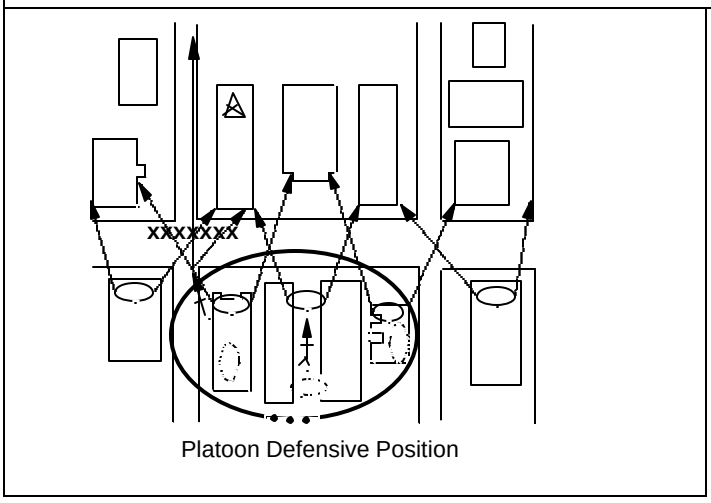












Platoon Defensive Position